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Technical Report

No. 13352

VALUE ENGINEERING "COPPERHEAD"

EVALUATION OF THE

HEAVY EXPANDED MOBILITY TACTICAL

TRUCK

JUN 1988

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JUL 22 1988

AMSTA-TRV

Warren, MI 48097-5000

Richard Siorek, Julie McCutcheon, and
Wasyl Mackiv
U. S. Army Tank-Automotive Command
ATTB: AMSTA-TRV

By Warren, MI 48097-5000

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This final technical report details the results of a preliminary Value Engineering (VE) study performed on the Heavy Expanded Mobility Tactical Truck (HEMTT). This study was performed to determine whether to proceed with the inclusion of a mandatory VE clause in the HEMTT contract, thereby making an intensive VE study of the vehicle a requirement. The results of the preliminary study indicate that an intensive VE study would be inappropriate at this time.

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1.0. INTRODUCTION

This final technical report, originating from the Value Engineering Branch, Design and Manufacturing Technology Directorate, U.S. Army Tank-Automotive Command (TACOM), details a preliminary study performed on the Heavy Expanded Mobility Tactical Truck (HEMTT). This study was performed to determine whether to proceed with the inclusion of a mandatory Value Engineering (VE) clause in the HEMTT contract, thereby making a VE "Copperhead" study of the vehicle a requirement.

In June 1986 then Army Materiel Command Commander General Richard Thompson requested that all major subordinate commands identify candidate systems for intensive VE efforts. A review of all TACOM systems narrowed the field to the major activities currently in production. Further study indicated that the system that might most benefit was the HEMTT. This system also presented the challenge of dealing with a system identified as a Non-Developmental Item (NDI), which basically consists of an assemblage of commercial components selected by the contractor. (See Appendix H for a detailed explanation of NDI.) These systems constitute a major portion of the Command's procurements and have been historically resistant to VE efforts. It was hoped that the intensive activity which represents the "Copperhead" VE approach would break that historical precedence.

"Copperhead" is the name applied to a government-contractor task force technique which was originally applied to the Copperhead missile weapon system. This is an intensive method which uses multidiscipline teams from both sides to evaluate the system in great detail, while looking for cost savings. One of the conditions of the VE program is that the expense of such an effort must be offset by the savings potential. In this instance, the ability to bear costs and provide savings was the subject of the study reported here.

2.0. OBJECTIVES

The objective of the project was to perform a preliminary review to determine whether to proceed with a full blown "Copperhead" VE study through the use of a mandatory VE clause in the current contract for the HEMTT vehicle.

3.0. CONCLUSIONS

The results of the preliminary review indicate that a mandatory VE "Copperhead" study would not be cost effective and, therefore, was inappropriate at the time. This report constitutes compliance with paragraph 4b(6) of OMB Circular A-131 (Appendix A) and closes the action initiated by the Commander's directive of 25 Jun 86 (Appendix B).

4.0. RECOMMENDATIONS

It is not recommended that an intensive VE study be performed on the HEMTT. Therefore, no mandatory VE clause should be included in the HEMTT contract with the current contractor, Oshkosh Truck Corporation.

5.0. DISCUSSION

In mid-1986 General Richard Thompson, the AMC Commander, requested that all major subordinate commands identify a candidate system for a "Copperhead" type of intensive VE study. The type of effort envisioned was to be similar to the production review conducted to assess the cost, schedule and technical risk of the Copperhead Missile Production Program. The Copperhead VE Program consisted of combined brainstorming sessions by government and industry personnel to identify cost drivers in the production of Copperhead missiles. Significant savings were achieved, with all necessary organizations (production, accounting, engineering, etc.) involved. According to General Thompson an investment of "...19 man-months of time and appropriate funding on the part of the government..." produced a savings of between \$121 and \$174 million. (See Appendix B.)

A review performed in 1986 of candidates for VE study at TACOM included the HEMTT as a possibility. (See Table 5-1 for a detailed time table of events.) The HEMTT, a 10-ton truck used for missile hauling, general purpose ammunition transport, fuel transport, recovery (wrecker), and Patriot semitrailer tractor activities, is manufactured by Oshkosh Truck Corporation. The HEMTT was identified as TACOM's candidate system to AMC Headquarters, in August 1986.

The HEMTT system was chosen as the "Copperhead" target because of its unique configuration and the dollar value of the contract (\$190,000,000). Additionally, the contract, because of its size, was written with a Value Engineering Program Requirements Clause (VEPRC) as an option (see Appendix G). While the results were not as had been originally hoped, the study did highlight those characteristics that should be considered in the selection and implementation of high-visibility VE efforts.

Because of the costs involved in a "Copperhead" VE study, the then evolving Program Executive Office (PEO) for Tactical Systems at TACOM, now PEO Combat Support, determined that a preliminary evaluation was in order. Following agreement in principal, between the Oshkosh president, Mr. Carrol and the TACOM Commander, Major General Holmes (see Appendices D and E), personnel from both organizations were tentatively assigned to develop lists of items that could be exploited for possible savings. This action essentially constituted a preliminary brainstorming session and was supported by personnel trained in the value analysis technique.

At the conclusion of the preliminary brainstorming sessions, personnel at TACOM and Oshkosh provided independent lists of items (see Appendix

Table 5-1. Time Table of Events

25 Jun 86	A letter dated 25 Jun 86 from General Richard Thompson (Commander, AMC) to Major General Arthur Holmes, Jr. (Commander, TACOM), requested a review of TACOM's program/project managers' VE programs "...to assure that all that can be done is being done." General Thompson asked that an activity or program for a concerted VE effort (such as that done on Copperhead) be identified. See Appendices B and C.
12 Aug 86	A letter from MG Holmes to John Carroll, President of the Oshkosh Truck Corporation, solicited his assistance in reviewing the HEMTT Program in a manner similar to that of the Copperhead Program. The letter stated that the Copperhead Program can provide significant savings through VE. See Appendix D.
30 Oct 86	Mr. Carroll, President, Oshkosh Truck Corp., wrote MG Holmes, suggesting that the Copperhead VE effort begin upon award of the follow-on contract. See Appendix E.
12 Feb 87 - 2 Jul 87	Preliminary study was undertaken to determine desirability of proceeding with the "Copperhead" effort. Information papers provided at Appendix F.
Aug 87	Final decision was made by PEO, General Ball, not to pursue Copperhead VE approach on HEMTT further.
Sep 87 - May 88	Project follow-up and final report preparation.

C) on the HEMTT which seemed promising for VE study. The items on both lists were as follows:

- elimination of rear cab windows
- replacement of Delco starter with Leece-Neville starter
- replacement of a cast beam in the Hendrickson suspension with a forged beam, and the use of a nonbonded center bushing on the RT-340 system. (Hendrickson Co. is the supplier. The beam is a connector between the rear tandem axles.)
- use of molded rear fenders on M977/M985
- incorporation of engine mounts into hard lift brackets
- use of molded composite crane remote control box
- elimination of M977/M985 front crane remote
- replacement of air motors with electrics on the wind-shield wipers
- elimination of cargo body sides from M985
- proposed use of Integrated Logistics Support (ILS) items

The contractor-submitted list contained an 11th item for possible VE study--the use of tandem air brake hoses.

The results of the initial activity looked promising. The lists submitted independently were almost identical. The proposed areas were further reviewed for cost savings potential.

As the study progressed, the end users of the HEMTT (TRADOC personnel) assigned values to each of the items on the list. This is the next step in the value analysis process. Comparison of the cost associated with a function can then be made with its value to the customer to identify possible areas for change. High differences, where an item of little value carries a large cost, are primary targets for change. In this case, the values of a number of the items (for example, the cab rear windows and crane remote control), were considered so high that these items could not be changed or eliminated without causing quite a hardship to the end users. These high-value items were removed from consideration for cost savings potential.

Other items were removed from consideration as time went on, where it was determined that a change in the manufacturing process would have been too costly to implement at such a late date in the contract. In some cases full production runs of components were already committed for. In addition, the costs of maintaining multiple vehicle configurations was

prohibitive. The interchangeability of new designs (parts) with existing ones in the field was of paramount importance. Furthermore, several of the items required extensive testing programs before they could be approved for change.

In the end analysis, the few remaining efforts could not support their own implementation costs as well as the weight of an intensive (and expensive) detail study effort.

Meetings between LTC Robert Whaley, Program Manager (PM), Heavy Tactical Vehicles; Mr. George Cowie, PM, Heavy Tactical Vehicles; Mrs. Connie Tucker, Procurement and Production; Mrs. Sharon Thomas, Contracting; and Mr. Wasyl Mackiw, Value Engineering Office, all of TACOM, determined that the activation of the mandatory VE clause would not be cost effective or in the government's best interests at this time. (See Appendix G for a copy of the part of the Federal Acquisition Regulation (52.248-1) pertinent to the proposed HEMTT VE contract clause.) This conclusion was reached based on the following findings:

- The HEMTT is a nondevelopmental item (NDI)--it consists of an assemblage of commercial components selected by the contractor. See Appendix H (AR 70-1, par. 7-3). Since the components are being produced commercially, economies of scale have already been realized through competitive bidding.
- The contractor had already selected the least costly components for assemblage consistent with the required performance characteristics. By its very definition, NDI items on systems available from various sources require little or no developmental effort by the Army, since these efforts have been accomplished by industry.
- The cost of testing required to achieve even minimal savings would have been greater than the projected savings.
- The contractor's required fee for participation in the performance of the VE study was considered too high (\$300,000) for the projected return.
- The contract had only two years left to run (Nov 87 to Nov 89) with no expected extensions. Therefore, the production base was limited.

Consequently, it was decided that the HEMTT was not a good subject for further "Copperhead" activity. It was deemed more appropriate to allow the normal progression of events to take effect under the contract's incentive clauses. This was determined to be in the government's best interests.

APPENDIX A

OMB CIRCULAR A-131, VALUE ENGINEERING

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OMB CIRCULAR A-131, VALUE ENGINEERING



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

January 26, 1988

CIRCULAR NO. A-131

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS
SUBJECT: Value Engineering

1. Purpose. The purpose of this Circular is to require the use of value engineering, as appropriate, by Federal Departments and agencies to identify and reduce nonessential procurement and program costs. The Circular requires agency heads to establish and improve their use of value engineering programs.

2. Background. Value engineering in the Federal Government is a means for some Federal contractors and Government entities to change the plans, designs and specifications for Federal programs and projects. These changes are intended to lower the Government's costs for goods and services and maintain necessary quality levels.

a. Prior Reports. Over the last several years, reports issued by the General Accounting Office (GAO) and many Inspectors Generals (IGs) have consistently concluded that greater use of value engineering would result in substantial savings to the Government. While some Federal agencies have value engineering programs, other agencies have not utilized value engineering fully. Even for agencies with established programs, the GAO and IG reports conclude that much more can and should be done to realize the benefits of value engineering.

b. Identified Impediments. The impediments that are frequently noted in these reports and that have prevented a greater use of value engineering include:

- (1) Failure of senior management to allocate the necessary resources, both in effort and in funds, to establish and run value engineering programs;
- (2) Absence of good criteria for selecting projects and programs for value engineering studies;
- (3) Failure to properly perform value engineering studies;
- (4) Inadequate attention by agency management to reviewing and implementing the recommendations made in value engineering studies.

- c. **Other Problems.** Many of the problems noted in the GAO and IG reports are attitudinal. A common observation in many of the reports is that there are few incentives to use value engineering or other cost cutting techniques to save money on fully funded Federal programs and projects. Obviously, programs should be developed, critically reviewed and administered in the most cost effective manner possible. Value engineering and other management techniques must ensure realistic project budgets and identify and remove nonessential capital and operating costs.
3. Definitions.
- a. **Agency.** As used in this Circular, the term "agency" means any executive department, military department, government corporation, government controlled corporation or other establishment of the executive branch of the Federal government.
- b. **Value Engineering.** An organized effort directed by a person trained in value engineering techniques to analyze the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with required performance, reliability, quality and safety.
- c. **Value Engineering Change Proposal (VECP).** A change proposal that is submitted by a contractor under a value engineering incentive or program requirement clause included in a Federal contract.
- d. **Value Engineering Proposal.** A change proposal developed by employees of the Federal Government or contractor value engineering personnel employed by the agency to provide value engineering services for the contract or program.
4. **POLICY.** Agencies shall establish value engineering programs and use value engineering, where appropriate, to reduce nonessential costs and improve productivity. Value engineering programs of agencies shall, at a minimum, provide for the following management and procurement practices.
- a. **Management Practices.** Value engineering programs must be tailored to the mission and organizational structure of each agency. For example, the cost and program/project size usually indicate the potential for value engineering. In most agencies, a relatively few programs or projects comprise the majority of costs and value engineering efforts should be concentrated on these programs and projects. Therefore, agencies shall:
- (1) Emphasize, through training, evaluation and other programs, the potential of value engineering to reduce unnecessary costs.
- b. **Procurement Practices.** Present procurement policies and practices for the use of value engineering are set forth in Parts 46 and 52 of the Federal Acquisition Regulation (FAR). Part 48 provides two basic incentive approaches for using value engineering. The first approach uses a Value Engineering Incentive (VEI) clause. In this approach the contractor's participation is voluntary and the contractor uses its resources to develop and submit VECPs. A contract clause provides that when a VECP is accepted any resulting savings are shared with the contractor on a preestablished - usually a percentage - basis set forth in the contract.
- The second approach, uses a Value Engineering Program Requirement (VEPR) clause and requires the contractor to conduct a specific value engineering effort within the contract, i.e., an effort to

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Identify and submit to the Government methods for performing more economically. In this second approach, the contractor also shares in any savings resulting from the VECP, but at a lower percentage rate than under the voluntary approach. This effort generally is directed at the major cost items of a system or project.

The FAR presently permits agency heads to exempt their agencies from using value engineering provisions in contracts. The authority to totally exempt agencies from using value engineering provisions will be rescinded and the FAR will be modified to require that contracting activities include value engineering provisions in contracts except where exemptions are granted on a case-by-case basis or for specific classes of contracts. One time agency-wide exemptions will no longer be permitted. In addition, agency contracting activities will:

- (1) Actively solicit VECPs from contractors.
- (2) Promote value engineering through contractor meetings and the dissemination of promotional and informational literature regarding the value engineering provisions of contracts.
- (3) Establish guidelines for processing value engineering change proposals and require that contract files list all change proposals requiring more than 45 days to accept or reject.

2-1-68

- (4) Document all contract files to explain the rationale for accepting or rejecting value engineering change proposals.
- (5) Use the value engineering clauses provided in the FAR for appropriate supply, service, architect-engineer and construction contracts.
- (6) Use the value engineering program requirement clause (FAR 52.218-1 alternatives I or II) in initial production contracts for major systems programs and for contracts for research and development except where the controlling program officer determines such documents the file to reflect that such use is not appropriate (see Section 4 of Public Law 93-406, as amended (41 U.S.C. 403) for definitions of major systems).

5. Sunset Review. The policies contained in this Circular will be reviewed by the Office of Management and Budget three years from the date of issuance.
6. Inquiries. Further information about this Circular may be obtained by contacting the Office of Federal Procurement Policy, 726 Jackson Place, NW, Washington, DC 20503, Telephone (202) 395-6800.

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James E. Miller III
Director

APPENDIX B

LETTER FROM GENERAL THOMPSON



DEPARTMENT OF THE ARMY
HEADQUARTERS, U. S. ARMY MATERIAL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-0031

June 25, 1986

Conrad
3 Jun 86

Major General Arthur Holmes, Jr.
Commander
U.S. Army Tank-Automotive Command
Warren, Michigan 48090

Dear General Holmes:

Fiscal Year 1985 was a record setting year for AMC in Value Engineering (VE). Value Engineering accomplishments to date indicate that FY86 will be another record year for VE savings. Records are not the goal for VE within AMC - hard dollar savings that offset inflation is the goal.

I am convinced that this goal is attainable and there are ample opportunities for achieving the savings necessary to meet that goal. The key to success is participation. In reviewing the synopsis of program/project managers' FY86 VE plans, I am not satisfied with the level of participation or the plans for achieving our goal of offsetting inflation. Every activity, program and contract represents an opportunity for VE savings only if there is active participation. Any lack of participation represents opportunities lost. There is nothing mysterious or complicated about the vast majority of VE efforts. Value Engineering has a proven track record for those who have expended the time and money to investigate and analyze.

A production review of the Copperhead Program is a classic example of what can be done when Industry and Government truly get serious about reducing costs. I have enclosed a synopsis of the study and some of its results in the area of Quality Assurance. The bottom line is that by investing approximately 19 man-months of time and appropriate funding on the part of the Government, the cost of the Copperhead program will be reduced between \$121 and \$174 million. I believe the results are worth the investment.

I would like you to review your program/project managers' VE programs to assure that all that can be done is being done.

Additionally, select an activity or program/project for a concerted VE effort as was done on Copperhead. Let me know what activity or program/project you select and provide your plan for accomplishing the study and capturing savings identified.

Sincerely,



Richard H. Thompson
General, U.S. Army
Commanding

Enclosure

COPPERHEAD
JOINT PRODUCTION REVIEW

BACKGROUND:

During the period 6 Jun through 13 Jul 83, a production review was conducted to assess cost, schedule and technical risk associated with the Copperhead production program. A team of Government and Martin Marietta Orlando Aerospace specialists was formed to conduct the review.

All necessary organizations were involved, including several AMC organizations and the Navy. The team examined the production of the Copperhead to determine what changes could be made in both the manufacturing process and the projectile itself with the primary goal of reducing the cost to the Government (without degradation of performance or reliability).

METHODOLOGY:

The Government provided a team chief and DOD personnel with specific expertise areas and the contractor provided corresponding personnel. The team was split into sub-teams concentrating on specific areas. Each sub-team was jointly led by a Government and Martin Marietta team leader. Brainstorming sessions were conducted to identify potential target areas (cost drivers) and possible cost reduction actions in their areas.

A more detailed analysis was conducted to identify good candidates for cost reduction and a summary chart was prepared with the candidates in priority order.

Individual studies were conducted and recommendations prepared. The recommendations were generally categorized as:

- o Government Value Engineering Proposals.
- o Value Engineering Change Proposals.
- o Martin Marietta Value Engineering Actions.

As a result of these recommendations, cost savings were calculated for each project and then summarized. The total savings (over the life of the program) were estimated to be in the range of \$121 to \$174 million. A summary of some of the areas studied and recommendations to reduce costs in those areas include:

REVISION OF TEST PLAN

During the study of the LAT/SOFT Recovery, it was determined that when the planned production rate was reduced by approximately 50 percent the Test Plan was not adjusted.

The existing Chain Sample Plan was replaced with a sequential plan, lot size increased to 2 months production or 500 rounds (whichever was less) and use of 3 rounds per month for SOFT Recovery.

Total Net Savings: \$21,372K

REDUCED INSPECTION

During the study of the Inspections being conducted, it was determined that the inspection Check Sheets called for inspections in addition to what was required by the Inspection Test Plan and many were redundant. Additionally, hardware was being inspected on a continuous basis instead of lot sampling resulting in unnecessary 100 percent inspections.

The non redundant inspections were included in the ITP together with a plan for reimplementation of the checks when defective material was discovered and a daily sample plan of 3 units per day was proposed in lieu of 100 percent inspection.

Total Net Savings: \$ 2,766K

TEST FLOW

Study of electrical component failures during the final Guidance Section Hot/Cold Test resulted in discovery that burn in of the cards increased the yield at electronic package and guidance section level.

100 percent card burn in was incorporated into the production line, greatly reducing rework of the cards after completed assembly in the Electronic Package.

Total Net Savings: \$ 1,653K

APPENDIX C

VALUE ENGINEERING CANDIDATE ITEMS LISTS

C-2

Attachment 2

VALUE ENGINEERING CANDIDATE ITEMS

Eliminate Rear Cab Windows - savings in production only.

Replace Delco Starter with Leece-Neville Starter

Hendrickson Suspension - Replace cast beam with a forged beam and use non-bonded center bushing on RT-340

Molded Rear Fenders on M977/M985

Incorporate Engine Mounts into Hard Lift Brackets

Molded Composite Crane Remote Control Stowage

Eliminate M977/M985 Front Crane Remote

Replace Air Motors with Electric Wipers

~ Tandem Air Brake Hoses ~

Eliminate Cargo Body Sides from M985

Integrated Logistics Support (ILS)
Commercial Low/Maintenance Free Batteries

TACOM'S LIST OF POTENTIAL CANDIDATES (HEMTT)
FOR COPPERHEAD STUDY

ELIMINATE REAR CAB WINDOWS

REPLACE DELCO STARTER WITH LEECE-NEVILLE

HENDRICKSON SUSPENSION - REPLACE WITH A FORGED BEAM

MOLDED REAR FENDERS ON M977/M985

ELIMINATE FRONT CRANE REMOTE (M977/M985)

INCORPORATE ENGINE MOUNTS INTO HARD LIFT BRACKETS

REPLACE AIR MOTORS WITH ELECTRIC WIPERS

ELIMINATE CARGO BODY SIDES FROM M985

MOLDED COMPOSITE CRANE REMOTE CONTROL STOWAGE

INTEGRATED LOGISTICS SUPPORT (ILS) ITEMS

TANDEM AIR BRAKE HOSES (Submitted by Contractor)

APPENDIX D

LETTER TO OSHKOSH TRUCK CORPORATION PRESIDENT

D-2

12 Aug 86



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY

UNITED STATES ARMY TANK AUTOMOTIVE COMMAND
WARREN MICHIGAN 48397-5000

AMCMP-TV

Oshkosh Truck Corporation
Mr. John Carroll
P. O. Box 2566
2307 Oregon Street
Oshkosh, WI 54903

Dear Mr. Carroll,

In the past several months this Command has made a thorough review of the Value Engineering Program. Value Engineering has been a concern of this Command, as well as Headquarters AMC, as evidenced by the attached letter from GEN Thompson to me dated 25 Jun 86. Also attached to the letter is a recent cooperative industry/government study of the Copperhead Program wherein significant savings were made through Value Engineering.

Because I believe there is a strong possibility to achieve a savings that can offset inflation, I am soliciting your personal help in reviewing the HEMTT Program in the same manner as accomplished for the Copperhead Program. This is a very worthwhile program that I believe will be rewarding and could provide us with some lessons learned that we can use in future programs.

I want you to know that I am serious about Value Engineering and look forward to working with you in this effort.

Sincerely,

/s/

Arthur Holmes, Jr.
Major General, USA
Commanding

Enclosure

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APPENDIX E

LETTER TO MAJOR GENERAL HOLMES



10 NOV REC'D

mg

OSHKOSH TRUCK CORPORATION

P.O. BOX 2566 • 2307 OREGON ST. • OSHKOSH, WI 54903-2566 U.S.A.
TELEPHONE 414-235-9150 • TWX 910-266-1060 • TELEX 260197
PARTS AND SERVICE • TWX 910-266-1065 • TELEX 262750

October 30, 1986

AM
1 Nov 86

Major General Arthur Holmes, Jr., AMSTA-CG
Department of the Army
U.S. Army Tank - Automotive Command
Building 231
Warren, MI 48397-5000

Subject: HEMTT Contract DAAE07-81-C-5760, Government/Industry Team to Identify, Document, and Implement Cost Reduction Ideas.

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Dear General Holmes:

Please refer to your August 12, 1986, letter regarding the subject team approach to Value Engineering. Oshkosh Truck Corporation (OTC) concurs with your assertion that this concept has merit and accepts the challenge to participate in a short term, intensive program of this nature. The prospect of continuing to work with the Government in exploring cost savings possibilities to our mutual benefit is welcomed.

Information regarding specific HEMTT program areas where concentrated efforts for cost savings might be directed, and the expertise of OTC personnel required to successfully accomplish program objectives, would be appreciated.

Due to the intensive effort required by both parties to negotiate the follow-on HEMTT contract by January 31, 1987, we suggest that this VE effort commence upon award of the follow-on contract.

Sincerely,

John P. Carroll
President

lsd

cc: Col. W. B. Heggie, AMCPM-TVH

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APPENDIX F

INFORMATION PAPERS

AMSTA - TMV

12 February, 1987

INFORMATION PAPER

SUBJECT: Copperhead Joint Production Review Program with OTC (Oshkosh Truck Corporation)

1. Reference, Ltr, CG AMC to CG TACOM, dated, 25 June, 1986 (Background: Copperhead Program to be established at TACOM).
2. Per said reference, the HEMTT, 10 ton truck, has been selected as the candidate for the Copperhead study. At this time, tentatively, several potential candidates have been identified for the study.
3. The Copperhead Format VE Program has been incorporated in the FY87/FY88 re-buy contract with OTC. As soon as the contract has been signed with OTC, the Copperhead Program will be established, details worked out, and implemented.
4. TACOM - Providing Soldiers the Decisive Edge.

Wasyl Mackiw
Wasyl Mackiw, P.E.

INFORMATION PAPER

AMSTA-TMV
9 Apr 87

SUBJECT: Status of Copperhead Program (Oshkosh Co.)

1. Purpose: Updated information is needed in regard to Copperhead Program.

2. Facts:

a. Ten (10) candidate items of HEMTT (see attached sheet) have been selected for the Copperhead study to be included as a VE clause in a contract now being negotiated with the Oshkosh Corp.

b. Priorities and the funding for the selected items have not been determined yet.

c. The contract negotiations haven't been finalized and the contract hasn't been signed as of this date (9 Apr 87), therefore the status of the VE clause is not known.


Wasyl Mackiw/45519
Value Engineer

RFP No. DAAE07-86-R-J335, HEMTT Rebuy

Potential Value Engineering Candidate Items

Eliminate Rear Cab Windows

Replace Delco Starter with Leece-Neville Starter

Hendrickson Suspension - Replace beam with a forged beam and use nonbonded center bushing on RT-340

Molded Rear Fenders on M977/M985

Incorporate Engine Mounts into Hard Lift Brackets

Molded Composite Crane Remote Control Stowage

Eliminate M977/M985 Front Crane Remote

Replace Air Motors with Electric Wipers

Tandem Air Brake Hoses

Eliminate Cargo Body Sides from M985

Integrated Logistics Support (ILS) Items

POTENTIAL CANDIDATES (HEMTT) FOR COPPERHEAD STUDY

ELIMINATE REAR CAB WINDOWS

REPLACE DELCO STARTER WITH LEECE-NEVILLE

HENDRICKSON SUSPENSION - REPLACE WITH A FORGED BEAM

MOLDED REAR FENDERS ON M977/M985

ELIMINATE FRONT CRANE REMOTE (M977/M985)

INCORPORATE ENGINE MOUNTS INTO HARD LIFT BRACKETS

REPLACE AIR MOTORS WITH ELECTRIC WIPERS

ELIMINATE CARGO BODY SIDES FROM M985

MOLDED COMPOSITE CRANE REMOTE CONTROL STOWAGE

INTEGRATED LOGISTICS SUPPORT (ILS) ITEMS

INFORMATION PAPER

SUBJECT: Status of Copperhead Program (Oshkosh Corp)

1. Purpose. Updated information is needed in regard to Copperhead Program.

2. Facts.

a. The contract for the HEMTT has been awarded. Notwithstanding, the VE clause is being considered as an option and will be called up as soon as the priorities and funding have been determined by the parties concerned. Also, the contractor (Oshkosh Corp) has submitted his own list of items as candidates for Copperhead studies. Both lists, contractor's and TACOM's must be reconciled.

b. A meeting has been set up for 21 Apr 87 (tentative date), to discuss the VE clause option. TMV representative will be invited to participate in the meeting.

Wasyl Mackiw/45519

28 Apr 87

INFORMATION PAPER

SUBJECT: Status of Copperhead Program (Oshkosh Truck Corp.)

1. Purpose. Updated information is needed in regard to Copperhead Program.

2. Facts:

a. Information Paper, 15 Apr 87.

b. A meeting was held on 21 Apr 87 (in Mr. Cowie's Office) to discuss the status of the Copperhead Program, an open option in the contract (for HEMTT). The status is "quo" - still in the stages of ongoing negotiations which may be finalized and concluded by the end of June, 1987.

c. The contractor's list of candidates for Copperhead studies is basically same as one submitted by TACOM except for one additional item, i.e., TANDEM AIR BRAKE HOSES (submitted by the contractor).

3 Encl.

Wasyl Mackiw/45519

AMSTA-TMV

2 July 87

INFORMATION PAPER

SUBJECT: Update of Copperhead Program

1. Background:

- a. Information Paper, 12 Feb 87. (Establish Copperhead Program at TACOM per directive from HQ AMC. HEMTT Truck was selected for the study).
- b. Information Paper, 9 Apr 87. (List of items submitted for the study, contract re-buy negotiations in progress).
- c. Information Paper, 15 Apr 87. (The contract has been awarded. Contractor submitted list of candidates for the study).
- d. Information Paper, 28 Apr 87. (Mandatory VECP clause incorporated in the contract as an option to be exercised at the convenience of the Government).

2. TACOM was directed to undertake Copperhead study. HEMTT was selected as the candidate for the study.

3. In the course of recent re-buy negotiations with Oshkosh Truck Co., VE clause as an option has been incorporated in the contract. The contractor and PM were asked to submit a list of potential candidates for the study. A dozen of items was proposed which initially appeared to be viable candidates. Further analyses of the candidates, and it was the consensus of LTC Whaley, Mr. George Cowie (PM), and Ms. Connie Tucker (Procurement) that the undertaking of the Copperhead studies in this particular instance will not generate the desired savings. The expended engineering effort, cost, and considering the life of the contract (2 years), may not be worthwhile; therefore, the option has not been exercised.

Encls.

Wasyl Mackiw
Wasyl Mackiw/45519
Value Engrg Br

F-10

APPENDIX G

VALUE ENGINEERING PROGRAM REQUIREMENTS CLAUSE

G-2

DISPOSITION FORM

16 JUL REC'D

For use of this form, see AR 340-1B; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

AMSTA-IPB (712)

Value Engineering Program Requirements Clause
(VEPRC)

TO Dir of Engr Data (AMSTA-G) Dir of Tk-Autmv Tech (AMSTA-R) C, Ofc of the PEO (AMCPM-GCM) C, Prog Mgr, Lt Cbt Veh (Prov) (AMCPM-LCV) C, Prog Mgr, Tac Veh (Prov) (AMCPM-TV)	FROM C, Proc Anal & Compl Div (AMSTA-IP)	DATE 13 JUL 1987	CMT 1 Ms. Cox/dt/48875
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1. Reference message, HQ AMC, AMCPD-SE, 291130Z May 86, (Encl 1).
2. The referenced message contains AMC policy regarding mandatory use of the Value Engineering Program Requirements Clause (VEPRC) in first and second production buys for major systems. It further states that the VEPRC is to be applied in all production contracts valued at \$10 million or more, unless the contracting officer makes a determination that it is unreasonable to expect sufficient savings to justify expenditures under the VEPRC. In this event, the contract files must be documented with the justification.
3. Since the VEPRC by nature must obligate funds on the contract specifically to pay for a range of VE activity identified in the contract by the Government, (as opposed to the basic Value Engineering Incentive Approach, in which the contractor is paid for VE only if he submits approved VE proposals,) in no case will P&P be able to use the VEPRC in a contract without specific support from the System Manager. The purpose of this DF is to notify your offices that in implementing the AMC policy regarding VEPRC, buyers have been instructed via the enclosed PIL (Encl 2) that before including the VEPRC in any contract, they must send a disposition form (DF) to the cognizant System Manager requesting (i) confirmation of fund availability to pay for a VE program requirement and (ii) an associated statement of work specifying what effort the contractor must perform under the program requirement; or (iii) recommendation to only include the Value Engineering Incentive clause in the contract in lieu of the VEPRC. The System Manager's response will in all cases be retained in the contract file as support for the Contracting Officer's determination of application or non-application of the VEPRC in the specified acquisitions.
4. Thank you for your cooperation.

2 Encls


GILBERT J. KNIGHT
C, Proc Anal & Compl Div

G-3

GD
GT
AMSTA-CI
AMSTA-T
AMSTA-CLL
7/15

PRIORITY

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PAGE 01,

TANK AUTOMOTIVE COMMAND - USAISCDETROIT

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P 291130Z MAY 86

FM CDRAMC ALEX VA //AMCPD-SE//
TO AIG 9122

BT

UNCLAS

SGN DEPUTY CHIEF OF STAFF FOR PRODUCTION

SUBJECT: MANDATORY VALUE ENGINEERING PROGRAM REQUIREMENTS CLAUSE
PRODUCTION CONTRACTS

- A. DEPSECOEF MEMORANDUM, 26 MAR 86, SUBJECT: VALUE ENGINEERING (NOTAL)
 - B. CDRAMC MSG, 101720Z DEC 85, SUBJECT: VALUE ENGINEERING (VE) SAVINGS TO OFFSET INFLATION (NOTAL).
 - C. HQAMC MSG, 171830Z DEC 85, SUBJECT: VALUE ENGINEERING (VE) GOALS FOR FY86 (NOTAL).
1. REF A ANNOUNCED A CHANGE IN THE POLICY FOR APPLICATION OF VALUE ENGINEERING (VE) EFFORTS FOR MAJOR SYSTEM ACQUISITIONS (0000 5000.1) WITHIN DOD. REF A REQUIRES THAT THE VE PROGRAM REQUIREMENT CLAUSE (FAR 52.248-1, ALTERNATIVE I OR II) WILL BE INCORPORATED IN ALL INITIAL PRODUCTION CONTRACTS (FIRST AND SECOND PRODUCTION BUYS) FOR MAJOR SYSTEMS AWARDED AFTER 30 JUNE 1986 WITH THE FOLLOWING

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EXCEPTIONS:

- A. CONTRACTS WHERE, IN THE JUDGMENT OF THE CONTRACTING OFFICER, THE PRIME CONTRACTOR HAS DEMONSTRATED AN EFFECTIVE VE PROGRAM DURING EITHER EARLIER PROGRAM PHASES, OR DURING OTHER RECENT COMPARABLE PRODUCTION CONTRACTS. (THE VE GOALS FOR SAVINGS TO THE GOVERNMENT ESTABLISHED BY REF B AND C SHOULD BE USED AS GUIDELINES FOR MEASURING EFFECTIVENESS BUT ARE NOT GO-NO-GO POINTS TO REPLACE THE MANAGEMENT DECISION PROCESS IN DETERMINING THE EFFECTIVENESS OF A CONTRACTOR'S PAST VE EFFORTS.)
- B. PRODUCTION CONTRACTS AWARDED PRIOR TO JUNE 30, 1986.

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C. PRICED OPTIONS FOR PRODUCTION WHICH HAVE BEEN ESTABLISHED PRIOR TO JUNE 30, 1986.

D. CONTRACTS WHICH ARE AWARDED ON THE BASIS OF PRODUCTION COMPETITION.

2. INCORPORATION OF THE VE PROGRAM REQUIREMENT CLAUSE (VEPRC) IN MAJOR SYSTEMS PRODUCTION CONTRACTS AS NOTED ABOVE IS MANDATORY WITHIN AMR. ADDITIONALLY, THE VEPRC WILL BE APPLIED IN ALL OTHER PRODUCTION CONTRACTS OVER \$10 MILLION UNLESS THE CONTRACTING OFFICER MAKES A DETERMINATION THAT IT IS UNREASONABLE TO EXPECT SUFFICIENT SAVINGS TO JUSTIFY EXPENDITURES UNDER THE VEPRC. LACK

PAGE 03 RUKLDAR8624 UNCLAS

OF PAST PRODUCTION VE ACTIVITY BY THE CONTRACTOR UNDER THE INCENTIVE CLAUSE SHOULD NOT BE USED AS THE BASIS FOR A DETERMINATION NOT TO INCLUDE THE VEPRC.

3. SOLICITATION/SOURCE SELECTION - AS THE BASIC DELIVERABLES UNDER THE VEPRC CONSIST OF A LEVEL-OF-EFFORT FOR VE STUDY AND REPORTS WHICH DOCUMENT RESULTS OF THAT EFFORT, IT IS ESSENTIAL THAT AN ASSESSMENT OF A PROSPECTIVE PRODUCTION CONTRACTOR'S ABILITY TO MAKE A MEANINGFUL CONTRIBUTION TO COST REDUCTION THROUGH VE BE MADE PRIOR TO CONTRACT AWARD. ACCORDINGLY, THE STATEMENT OF WORK FOR VE IN THE SOLICITATION MUST COMMUNICATE THE IMPORTANCE AND SCOPE OF THE EXPECTED VE EFFORT. THE VE CAPABILITY (AVAILABLE/PLANNED) OF THE CONTRACTOR SHOULD BE AN ELEMENT OF THE EVALUATION CRITERIA INCLUDED IN THE ASSESSMENT OF THE OFFEROR'S MANAGEMENT ABILITY.

4. FUNDING - FUNDING FOR WORK CHARGEABLE TO THE GOVERNMENT RESULTING FROM THE VEPRC WILL BE CHARGED TO THE PRODUCTION CONTRACT AS ENGINEERING IN SUPPORT OF PRODUCTION (IAW AR 700-99 AND DARCOM-R 70-8) AND IN AN AMOUNT COMMENSURATE WITH THE CONTRACT AMOUNT AND THE VE SAVINGS GOALS ESTABLISHED BY REF B AND C. THE FUNDING WILL BE TREATED AS A GOVERNMENT COST UPON APPROVAL OF ANY RESULTING VECPS (GOVERNMENT COSTS ARE TO BE RECOVERED FROM THE

PAGE 04 RUKLDAR8624 UNCLAS

SAVINGS PRIOR TO SHARING WITH THE CONTRACTOR). THE FUNDING WILL BE INCLUDED IN THE CONTRACT AS SEPARATE CONTRACT LINE ITEMS FOR:

A. VEPRC PROGRAM/REPORTING (INCLUDING UDI-P-20483, UDI-P-20489, UDI-P-22490, AND UDI-P-20491).

B. VE EFFORT.

5. IMPLEMENTATION:

A. ALL NEW SOLICITATIONS FOR PRODUCTION CONTRACTS OVER \$10 MILLION WILL CONTAIN A VEPRC REQUIREMENT. PRIME CONTRACTORS WILL BE REQUIRED TO INCLUDE A MANDATORY VE REQUIREMENT IN APPROPRIATE SUB-CONTRACTS.

B. SOLICITATIONS FOR PRODUCTION CONTRACTS FOR WHICH THE PROPOSALS OR BIDS WILL NOT BE RECEIVED BY 30 JUN 86 OR FOR WHICH CONTRACT AWARD WILL NOT BE MADE IN THE 4TH QTR FY86 WILL BE MODIFIED TO INCORPORATE A MANDATORY VEPRC REQUIREMENT.

C. PROPOSED PRODUCTION CONTRACTS FOR WHICH PROPOSALS OR BIDS HAVE BEEN RECEIVED BY 30 JUN 86 AND CONTRACT AWARD IS PLANNED FOR THE 4TH QTR FY86 WILL NOT BE DELAYED TO INCLUDE THE MANDATORY VEPRC. HOWEVER, ANY CONTRACT AWARDED AFTER 1 JUL 86 MUST BE

PRIORITY

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this clause, including this paragraph (d), in all subcontracts or purchase orders under this contract.

(e) The requirement in paragraph (a) does not apply to—

(1) Small purchases as defined in 48 CFR 13;

(2) Cargoes carried in vessels of the Panama Canal Commission or as required or authorized by law or treaty;

(3) Ocean transportation between foreign countries of supplies purchased with foreign currencies made available, or derived from funds that are made available, under the Foreign Assistance Act of 1961 (22 U.S.C. 2353); and

(4) Shipments of classified supplies when the classification prohibits the use of non-Government vessels.

(f) Guidance regarding fair and reasonable rates for privately owned U.S.-flag commercial vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590. Phone: 202-426-4610.

(End of clause)

(R 1-19.108-2(b))

Alternate I (APR 1984). If an applicable statute requires, or if it has been determined under agency procedures, that supplies to be furnished under contracts shall be transported exclusively in privately owned U.S.-flag commercial vessels (see 47.507(b)), delete paragraphs (a) and (b) from the clause and substitute for them the following paragraphs (a) and (b):

(a) Except as provided in paragraph (b) below, the Contractor shall use privately owned U.S.-flag commercial vessels, and no others, in the ocean transportation of any supplies to be furnished under this contract.

(b) If such vessels are not available for timely shipment at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels, the Contractor shall notify the Contracting Officer and request (1) authorization to ship in foreign-flag vessels; or (2) designation of available U.S.-flag vessels. If the Contractor is authorized in writing by the Contracting Officer to ship the supplies in foreign-flag vessels, the contract price shall be equitably adjusted to reflect the difference in costs of shipping the supplies in privately owned U.S.-flag commercial vessels and in foreign-flag vessels.

(R 7-104.19, Clause paragraph (c) 1979 MAR)

Alternate II (APR 1984). If an applicable statute requires, or if it has been determined under agency procedures, that supplies, materials, or equipment to be shipped under construction contracts shall be transported exclusively in privately owned U.S.-flag commercial vessels (see 47.507(c)), delete paragraphs (a) and (b) from the clause and substitute for them the following paragraphs (a) and (b):

(a) When ocean transportation is required to bring supplies, materials, or equipment to the construction

site from the United States either for use in performance of, or for incorporation in, the work called for by this contract, the Contractor shall use privately owned U.S.-flag commercial vessels to the extent that such vessels are available at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels.

(b) The Contractor shall not make any shipment exceeding 10 measurement tons (400 cubic feet) by vessels other than privately owned U.S.-flag commercial vessels without (1) notifying the Contracting Officer that U.S.-flag commercial vessels are not available at rates that are fair and reasonable for such vessels and (2) obtaining permission to ship in other vessels. If permission is granted, the contract price shall be equitably adjusted to reflect the difference in cost.

(R 7-603.41 1979 JUNE)

52.248-1 Value Engineering.

As prescribed in 48.201, insert the following clause in supply or service contracts to provide a value engineering incentive under the conditions specified in 48.201. In solicitations and contracts for items requiring an extended period for production (e.g., ship construction, major system acquisition), if agency procedures prescribe sharing of future contract savings on all units to be delivered under contracts awarded during the sharing period, the contracting officer shall modify subdivision (i)(3)(i) and the first sentence under subparagraph (3) of the definition of acquisition savings by substituting "under contracts awarded during the sharing period" for "during the sharing period." For engineering-development and low-rate-initial-production solicitations and contracts, the contracting officer shall modify subdivision (i)(3)(i) and the first sentence under subparagraph (3) of the definition of acquisition savings by substituting for "the number of future contract units scheduled for delivery during the sharing period," "a number equal to the quantity required over the highest 36 consecutive months of planned production, based on planning or production documentation at the time the VECP is accepted."

VALUE ENGINEERING (APR 1984)

(a) *General.* The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any net acquisition savings realized from accepted VECP's, in accordance with the incentive sharing rates in paragraph (f) below.

(b) *Definitions.* "Acquisition savings," as used in this clause, means savings resulting from the application of a VECP to contracts awarded by the same contracting office or its successor (and by other contracting offices if included in an extended sharing base specified in the Schedule) for essentially the same unit. Acquisition savings include—

(1) Instant contract savings, which are the net cost reductions on this, the instant contract, and which are equal to the instant unit cost reduction multiplied

by the number of instant contract units affected by the VECP, less the Contractor's allowable development and implementation costs;

(2) Concurrent contract savings, which are measurable net reductions in the prices of other contracts that are definitized and ongoing at the time the VECP is accepted; and

(3) Future contract savings, which are the product of the future unit cost reduction multiplied by the number of future contract units scheduled for delivery during the sharing period. If this contract is a multiyear contract, future contract savings include savings on all quantities funded after VECP acceptance.

"Collateral costs," as used in this clause, means agency cost of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contracting office" includes any contracting office that the acquisition is transferred to, such as another branch of the agency or another agency's office that is performing a joint acquisition action.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Future unit cost reduction," as used in this clause, means the instant unit cost reduction adjusted as the Contracting Officer considers necessary for projected learning or changes in quantity during the sharing period. It is calculated at the time the VECP is accepted and applies either (1) throughout the sharing period, unless the Contracting Officer decides that recalculation is necessary because conditions are significantly different from those previously anticipated or (2) to the calculation of a lump-sum payment, which cannot later be revised.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistics support. The term does not include the normal administrative costs of processing the VECP or any increase in this contract's cost or price resulting from negative instant contract savings.

"Instant contract," as used in this clause, means this contract, under which the VECP is submitted. It does not include increases in quantities after acceptance of the VECP that are due to contract modifications, exercise of options, or additional orders. If this is a multiyear contract, the term does not include quantities

funded after VECP acceptance. If this contract is a fixed-price contract with prospective price redetermination, the term refers to the period for which firm prices have been established.

"Instant unit cost reduction" means the amount of the decrease in unit cost of performance (without deducting any Contractor's development or implementation costs) resulting from using the VECP on this, the instant contract. If this is a service contract, the instant unit cost reduction is normally equal to the number of hours per line-item task saved by using the VECP on this contract, multiplied by the appropriate contract labor rate.

"Negative instant contract savings" means the increase in the cost or price of this contract when the acceptance of a VECP results in an excess of the Contractor's allowable development and implementation costs over the product of the instant unit cost reduction multiplied by the number of instant contract units affected.

"Net acquisition savings" means total acquisition savings, including instant, concurrent, and future contract savings, less Government costs.

"Sharing base," as used in this clause, means the number of affected end items on contracts of the contracting office accepting the VECP or, if the sharing base has been extended under paragraph 48.102(e) of the Federal Acquisition Regulation (48 CFR Chapter 1), the number of affected end items on contracts of contracting offices included in the extended base specified in the Schedule.

"Sharing period," as used in this clause, means the period beginning with acceptance of the first unit incorporating the VECP and ending at the later of (1) 3 years after the first unit affected by the VECP is accepted or (2) the last scheduled delivery date of an item affected by the VECP under this contract's delivery schedule in effect at the time the VECP is accepted.

"Unit," as used in this clause, means the item or task to which the Contracting Officer and the Contractor agree the VECP applies.

"Value engineering change proposal (VECP)" means a proposal that—

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the overall projected cost to the agency without impairing essential functions or characteristics; provided, that it does not involve a change—

(i) In deliverable end item quantities only;

(ii) In research and development (R&D) end items or R&D test quantities that is due solely to results of previous testing under this contract; or

(iii) To the contract type only.

(c) *VECP preparation.* As a minimum, the Contractor shall include in each VECP the information described

in subparagraphs (1) through (8) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and the proposed requirement, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, the effect of the change on the end item's performance, and any pertinent objective test data.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) Identification of the unit to which the VECP applies.

(4) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under the Subcontracts paragraph of this clause, below.

(5) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(6) A prediction of any effects the proposed change would have on collateral costs to the agency.

(7) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(8) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) *Submission.* The Contractor shall submit VECP's to the Contracting Officer, unless this contract states otherwise. If this contract is administered by other than the contracting office, the Contractor shall submit a copy of the VECP simultaneously to the Contracting Officer and to the Administrative Contracting Officer.

(e) *Government action.* (1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, ex-

plaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause and made either before or within a reasonable time after contract performance is completed. Until such a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The Contracting Officer's decision to accept or reject all or part of any VECP and the decision as to which of the sharing rates applies shall be final and not subject to the Disputes clause or otherwise subject to litigation under the Contract Disputes Act of 1978 (41 U.S.C. 601-613).

(f) *Sharing rates.* If a VECP is accepted, the Contractor shall share in net acquisition savings according to the percentages shown in the table below. The percentage paid the Contractor depends upon (1) this contract's type (fixed-price, incentive, or cost-reimbursement), (2) the sharing arrangement specified in paragraph (a) above (incentive, program requirement, or a combination as delineated in the Schedule), and (3) the source of the savings (the instant contract, or concurrent and future contracts), as follows:

CONTRACTOR'S SHARE OF NET ACQUISITION SAVINGS

(figures in percent)

Contract Type	Sharing Arrangement			
	Incentive (voluntary)	Program requirement (mandatory)		
	Instant contract rate	Concurrent and future contract rate	Instant contract rate	Concurrent and future contract rate
Fixed-price (other than incentive)	50	50	25	25
Incentive (fixed-price or cost)	*	50	*	25
Cost-reimbursement (other than incentive)**	25	25	15	15

*Same sharing arrangement as the contract's profit or fee adjustment formula.

**Includes cost-plus-award-fee contracts.

(g) *Calculating net acquisition savings.* (1) Acquisition savings are realized when (i) the cost or price is reduced on the instant contract, (ii) reductions are negotiated in concurrent contracts, (iii) future contracts are awarded, or (iv) agreement is reached on a lump-sum

FEDERAL ACQUISITION REGULATION (FAR)

payment for future contract savings (see subparagraph (i)(4) below). Net acquisition savings are first realized, and the Contractor shall be paid a share, when Government costs and any negative instant contract savings have been fully offset against acquisition savings.

(2) Except in incentive contracts, Government costs and any price or cost increases resulting from negative instant contract savings shall be offset against acquisition savings each time such savings are realized until they are fully offset. Then, the Contractor's share is calculated by multiplying net acquisition savings by the appropriate Contractor's percentage sharing rate (see paragraph (f) above). Additional Contractor shares of net acquisition savings shall be paid to the Contractor at the time realized.

(3) If this is an incentive contract, recovery of Government costs on the instant contract shall be deferred and offset against concurrent and future contract savings. The Contractor shall share through the contract incentive structure in savings on the instant contract items affected. Any negative instant contract savings shall be added to the target cost or to the target price and ceiling price, and the amount shall be offset against concurrent and future contract savings.

(4) If the Government does not receive and accept all items on which it paid the Contractor's share, the Contractor shall reimburse the Government for the proportionate share of these payments.

(h) *Contract adjustment.* The modification accepting the VECP (or a subsequent modification issued as soon as possible after any negotiations are completed) shall—

(1) Reduce the contract price or estimated cost by the amount of instant contract savings, unless this is an incentive contract;

(2) When the amount of instant contract savings is negative, increase the contract price, target price and ceiling price, target cost, or estimated cost by that amount;

(3) Specify the Contractor's dollar share per unit on future contracts, or provide the lump-sum payment;

(4) Specify the amount of any Government costs or negative instant contract savings to be offset in determining net acquisition savings realized from concurrent or future contract savings; and

(5) Provide the Contractor's share of any net acquisition savings under the instant contract in accordance with the following:

- (i) Fixed-price contracts—add to contract price.
- (ii) Cost-reimbursement contracts—add to contract fee.

(i) *Concurrent and future contract savings.* (1) Payments of the Contractor's share of concurrent and future contract savings shall be made by a modification to the instant contract in accordance with subparagraph (h)(5) above. For incentive contracts, shares

shall be added as a separate firm-fixed-price line item on the instant contract. The Contractor shall maintain records adequate to identify the first delivered unit for 3 years after final payment under this contract.

(2) The Contracting Officer shall calculate the Contractor's share of concurrent contract savings by (i) subtracting from the reduction in price negotiated on the concurrent contract any Government costs or negative instant contract savings not yet offset and (ii) multiplying the result by the Contractor's sharing rate.

(3) The Contracting Officer shall calculate the Contractor's share of future contract savings by (i) multiplying the future unit cost reduction by the number of future contract units scheduled for delivery during the sharing period, (ii) subtracting any Government costs or negative instant contract savings not yet offset, and (iii) multiplying the result by the Contractor's sharing rate.

(4) When the Government wishes and the Contractor agrees, the Contractor's share of future contract savings may be paid in a single lump sum rather than in a series of payments over time as future contracts are awarded. Under this alternate procedure, the future contract savings may be calculated when the VECP is accepted, on the basis of the Contracting Officer's forecast of the number of units that will be delivered during the sharing period. The Contractor's share shall be included in a modification to this contract (see subparagraph (h)(3) above) and shall not be subject to subsequent adjustment.

(5) *Alternate no-cost settlement method.* When, in accordance with subsection 48.104-3 of the Federal Acquisition Regulation, the Government and the Contractor mutually agree to use the no-cost settlement method, the following applies:

(i) The Contractor will keep all the savings on the instant contract and on its concurrent contracts only.

(ii) The Government will keep all the savings resulting from concurrent contracts placed on other sources, savings from all future contracts, and all collateral savings.

(j) *Collateral savings.* If a VECP is accepted, the instant contract amount shall be increased, as specified in subparagraph (h)(5) above, by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings shall not exceed (1) the contract's firm-fixed-price, target price, target cost, or estimated cost, at the time the VECP is accepted, or (2) \$100,000, whichever is greater. The Contracting Officer shall be the sole determiner of the amount of collateral savings, and that amount shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

(k) *Relationship to other incentives.* Only those benefits of an accepted VECP not rewardable under performance, design-to-cost (production unit cost, operating and support costs, reliability and maintainability), or similar incentives shall be rewarded under this clause. However, the targets of such incentives affected by the VECP shall not be adjusted because of VECP acceptance. If this contract specifies targets but provides no incentive to surpass them, the value engineering sharing shall apply only to the amount of achievement better than target.

(l) *Subcontracts.* The Contractor shall include an appropriate value engineering clause in any subcontract of \$100,000 or more and may include one in subcontracts of lesser value. In calculating any adjustment in this contract's price for instant contract savings (or negative instant contract savings), the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs, and any value engineering incentive payments to a subcontractor, clearly resulting from a VECP accepted by the Government under this contract. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that the payments shall not reduce the Government's share of concurrent or future contract savings or collateral savings.

(m) *Data.* The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering clause of contract....., shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

(R 7-104.44(a)(1) 1977 SEP)

(R 7-104.44(a)(2) 1976 JUL)

(R 7-104.44(a)(3) 1976 JUL)

(R 7-104.44(a)(4) 1976 JUL)

(R 7-104.44(a)(5) 1976 JUL)

(R 7-104.44(a)(6)(i)(A) 1976 FEB)

(R 7-104.44(a)(6)(i)(B) 1976 FEB)

(R 7-104.44(a)(6)(i)(D) 1976 FEB)

(R 7-104.44(a)(6)(ii)(A) 1976 FEB)

(R 7-104.44(a)(6)(ii)(B) 1976 FEB)

(R 7-104.44(a)(6)(ii)(D) 1976 FEB)
(R 7-204.32(b) 1976 JUL)
(R 7-204.32(c) 1976 JUL)
(R 7-204.32(d)(i) 1976 FEB)
(R 7-204.32(d)(ii) 1976 FEB)
(R 7-204.32(d)(iii) 1976 JUL)
(R 7-204.32(d)(iv) 1976 FEB)
(R 7-1903.51 1976 JUL)

Alternate I (APR 1984). If the contracting officer selects a mandatory value engineering program requirement, substitute the following paragraph (a) for paragraph (a) of the basic clause:

(a) *General.* The Contractor shall (1) engage in a value engineering program, and submit value engineering progress reports, as specified in the Schedule and (2) submit to the Contracting Officer any resulting value engineering change proposals (VECP's). In addition to being paid as the Schedule specifies for this mandatory program, the Contractor shall share in any net acquisition savings realized from accepted VECP's, in accordance with the program requirement sharing rates in paragraph (f) below.

(R 7-104.44(b) 1974 APR)

Alternate IV (APR 1984). If the contracting officer selects both a value engineering incentive and mandatory value engineering program requirement, substitute the following paragraph (a) for paragraph (a) of the basic clause:

(a) *General.* For those contract line items designated in the Schedule as subject to the value engineering program requirement, the Contractor shall (1) engage in a value engineering program, and submit value engineering progress reports, as specified in the Schedule and (2) submit to the Contracting Officer any resulting VECP's. In addition to being paid as the Schedule specifies for this mandatory program, the Contractor shall share in any net acquisition savings realized from VECP's accepted under the program, in accordance with the program requirement sharing rates in paragraph (f) below. For remaining areas of the contract, the Contractor is encouraged to develop, prepare, and submit VECP's voluntarily; for VECP's accepted under these remaining areas, the incentive sharing rates apply.

(NM)

Alternate III (APR 1984). When the head of the contracting activity determines that the cost of calculating and tracking collateral savings will exceed the benefits to be derived in a contract calling for a value engineering incentive, delete paragraph (j) from the basic clause and redesignate the remaining paragraphs accordingly.

52.248-2 Value Engineering Program—Architect-Engineer.

As prescribed in 48.201(f), insert the following clause in solicitations and contracts for architect-engineer

APPENDIX H

AR 70-1, par. 7-3

i. The ASAP approach takes advantage of parallel initiatives introduced by CBTDEV, MATDEV and evaluators, being concurrently incorporated into AR 71-9, AR 70-10, AR 71-3, AR 71-2, AR 700-127, AR 1000-XX, and related acquisition documentation.

7-3. Nondevelopmental Items.

a. Nondevelopmental Items (NDI) are systems available from a variety of sources requiring little or no development effort by the Army. NDIs include materiel developed and in use by other US military services or Government agencies, and materiel developed and in use by other countries, as well as commercially available materiel. The acquisition process for an NDI is not a separate process, but a tailoring of events within the materiel acquisition process and should be one of the first alternatives considered for solution to a materiel need.

b. There are two general categories of NDI:

(1) Category A - Off-the-shelf items (commercial, foreign, other services) to be used in the same environment for which the items were designed. No development or modification of hardware or operational software required.

(2) Category B - Off-the-shelf items (commercial, foreign, other services) to be used in an environment different than that for which designed. Item requires modification to hardware or operational software.

c. There is a third level of effort. This approach emphasizes integration of existing componentry and essential engineering effort to accomplish systems integration. This strategy requires a dedicated R&D effort to allow for system engineering of existing components, for software modification/development, and to ensure the total system meets requirements.

d. For all types of NDI, the acquisition strategy will consider economic and time constraints and realities when determining needs and tradeoffs. No acquisition, including NDI, is exempt from minimal essential test and evaluation necessary to verify the MANPRINT, quality, safety, reliability, performance, supportability, transportability, and availability characteristics of a system to include life cycle cost (LCC) unless previous test and performance data or market analysis (information) is adequate for verifying operational effectiveness and suitability of the system.

(1) Category A - NDI. Acquisition of commercial off-the-shelf products to satisfy Army requirements is authorized and encouraged. These are generally products or items in production, available on the public market at established market or catalog prices. Overly restrictive, duplicative, or unnecessary government specification and military standardization should be eliminated.

(a) When possible, a commercial market specification or a performance specification will be used in the acquisition of Category A - NDI. All commercially available and acceptable data (test and historical data,

technical publications, drawings, manufacturer's part information, quality and safety, and reliability data) will be procured when economically feasible and used to the maximum extent to preclude the costly development of such data.

(b) A determination should be made as part of the AS whether Government, contractor, or a mix of Government/contractor logistic support, is the most cost and operationally effective approach to supporting the item. Interim contractor support (ICS), life time contractor logistic support (CLS), and/or full organic logistic support must be considered early and planned for up front.

(c) Consider the use of the contractor's commercial distribution channels and other support services when consistent with Army regulation, it is economical to do so, and impact for commercial off-the-shelf items may be minimized or eliminated when previous test or data document product acceptability; or when market analysis results are considered adequate for evaluating and determining military operational effectiveness and suitability, and freedom from unwarranted hazards.

(2) Category B - NDI. In this case the commercially available item must be ruggedized or militarized to meet Army requirements. Therefore, modification of hardware and/or operational software is usually required. The modification includes those R&D engineering, design, or integration efforts required to modify the product or item to a configuration that satisfies Army peculiar requirements, and/or performance specifications.

(a) Need to modify equipment to satisfy the Army requirement normally is usually determined when market analysis results indicate that a standard commercial product or an item developed by another service or country can be readily modified to meet requirements, or when testing or analysis indicate that modifications are necessary.

(b) When the need to perform modifications is identified after Milestone I approval, the AS must be updated to reflect need for modification and its ripple effect on all system support processes. Changes to an approved AS must be approved by the same decision authority that approved the original strategy. Such changes normally require additional tailoring of the acquisition process to implement the new AS.

c. Army requirements may be satisfied by forming a new system assembled from existing and proven components or from a combination of proven components and modified/R&D components. This type of NDI saves the Army from a "scratch" research and development effort. However, due to the amount of R&D effort normally required for systems integration, this type of NDI acquisition effort is closest to that of the developmental type item. Logistics support analysis will usually have to be done on any newly developed components and the hardware/software integration areas. Feasibility testing is required in a military environment, as well as preproduction testing on the complete system. Also, hardware/ADP software integration and user testing is required.

f. The consideration of NDI alternatives should draw upon market analysis information (see Chapter 8). An AS to support the recommendation to acquire NDI will be prepared as required by Chapter 5 (in format per Annex F to Appendix C), and will specifically include TLCCS to achieve course of action that is in the best interests of the Government.

(1) To assist in the identification of available foreign items, all market analyses are to be coordinated with the MACOM staff proponent for security assistance, before initiation. The US Army International Materiel Evaluation (IME) Program is established to review and evaluate foreign free world materiel in the late stage of development, or deployed, that appears to meet US Army requirements. Limited OSD funding is available for the testing and evaluation of foreign materiel.

(2) Consider the use of organic sources (depots/arsenals) for R&D engineering, design, or integration efforts as required to modify NDI products or items to a configuration that satisfies the minimum Army requirements.

(3) The preferred contracting method for NDI acquisition is two-step sealed bid, however, as an alternative, firm fixed price negotiated method may be used.

g. Based on the AS developed, the tailored acquisition process that implements the strategy can be established. If no R&D engineering, design, integration, ILS, test, or evaluation effort is needed, the acquisition phases concerned with development or proveout can be skipped or compressed.

(1) Minimize or eliminate Government testing before purchase when either of the following apply: Previous test and performance data document product acceptability; and suitability or Market Investigations (see Chapter 8) are considered adequate for evaluating and determining Military operational effectiveness and suitability, and freedom from unwarranted hazards. Previous test and performance data from commercial manufacturers, users, and other services, agencies, or countries can be used.

(2) Purchase of commercial products to meet user needs is a two-way street. The MATDEV must be responsive to legitimate needs, and the user representative must be flexible and realistic in stating and economically controlling needs. MATDEV and user objectives are to obtain systems which meet the minimum requirements of the Government.

7-4. Logistic Support Considerations.

a. When the standard acquisition process is altered, time available to execute essential components of the program may be reduced. Particular attention must be given to the effects of compressed processes on the program's ILS component. During development, the MATDEV must identify actions taken to reduce support risks.

b. Because ILS managers are particularly affected, they must ensure that materiel items and systems being developed or acquired under a streamlined

process are supportable when fielded. AR 700-127 provides guidance for ILS management in a streamlined acquisition environment.

c. Decision authorities must carefully review AS for streamlined programs; this review will ensure that adequate logistic support will be provided when the system is fielded.

d. ILS considerations apply to all acquisition programs, including all categories of NDI programs.

e. Interim contractor support (ICS) should be considered early as a means of accommodating accelerated fieldings. Plans for ICS shall be documented in the ILS Plan.

7-5. Type Classification for NDI.

a. Basic policy for type classification (TC) is contained in AR 70-61.

b. For Category A NDI (see Chapter 7), TC of a generic system before solicitation may be used, based on performance specifications or functional purchase description. TC is not complete until the manufacturer's make and model number are incorporated into the system's documentation. In some cases, logistics support considerations must be verified, using acceptance testing or testing as specified on contract. Results of these tests and all pertinent test data will be used to determine if the item should be type classified standard.

c. Plans for type classification should be made early and documented in the Acquisition Strategy (AS). Different TC strategies will have to be supported by different ILS, testing, and production strategies.

7-6. Funding Guidance. Funding of acquisition programs normally is the responsibility of the MATDEV. Close coordination with MACOM comptrollers is encouraged; this close coordination will ensure the use of the proper appropriation during each phase of the program. Basic guidance concerning the proper appropriations for specific activities conducted during the acquisition process are contained in AR 37-100-FY. Questions concerning funding should be resolved through Comptroller channels.

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